

1 **52.** (Amended) The intact charge-switch NP probe according to claim **51**,
2 wherein either said intact NP probe has a positive molecular charge, or wherein upon cleavage of
3 said phosphate detectable moiety, said phosphate detectable moiety carries a different charge
4 relative to said intact NP probe.

1 **53.** (Amended) The intact charge-switch NP probe according to claim **51**,
2 wherein either said intact NP probe has a negative molecular charge, or wherein upon cleavage
3 of said phosphate detectable moiety, said phosphate detectable moiety carries a different charge
4 relative to said intact NP probe.

1 **54.** (Amended) The intact charge-switch NP probe according to claim **51**,
2 wherein said charge-switch NP probe is a nucleotide triphosphate (NTP); and wherein said
3 phosphate detectable moiety is a pyrophosphate with a fluorophore moiety attached thereto.

1 **55.** (Amended) The intact charge-switch NP probe according to claim **51**,
2 wherein said intact NTP probe has a positive charge.

1 **56.** (Amended) The intact charge-switch NP probe according to claim **54**,
2 wherein upon cleavage of said phosphate detectable moiety as a pyrophosphate fluorophore
3 moiety, said pyrophosphate fluorophore moiety carries a positive charge relative to said intact
4 NTP probe.

1 **57.** (Amended) The intact charge-switch NP probe according to claim **54**,
2 wherein upon cleavage of said phosphate detectable moiety as a pyrophosphate fluorophore
3 moiety, said pyrophosphate fluorophore moiety carries a negative charge relative to said intact
4 NTP probe.

1 **58.** (Amended) The intact charge-switch NP probe according to claim **51**,
2 wherein said NTP probe is a member selected from the group consisting of a deoxynucleotide
3 triphosphate (dNTP), and a nucleotide triphosphate (NTP).

1 **59.** (Amended) The intact charge-switch NP probe according to claim **58**,
2 wherein said NTP probe is a deoxynucleotide triphosphate (dNTP).

1 **60.** (Amended) The intact charge-switch NP probe according to claim **59**,
2 wherein said deoxynucleotide triphosphate (dNTP) is a member selected from the group
3 consisting of deoxyadenosine triphosphate, deoxycytosine triphosphate, deoxyguanosine
4 triphosphate deoxythymidine triphosphate and deoxyuridine triphosphate.

1 **61.** (Amended) The intact charge-switch NP probe according to claim **58**,
2 wherein said nucleotide triphosphate (NTP) is a member selected from the group consisting of
3 adenosine triphosphate, cytosine triphosphate, guanosine triphosphate and uridine triphosphate.

1 **62.** (Amended) The intact charge-switch NP probe according to claim **54**,
2 wherein said fluorophore moiety is attached to said terminal phosphate via a linker.

1 **63.** (Amended) The intact charge-switch NP probe according to claim **62**,
2 wherein said fluorophore linker is an alkylene group having between about 5 to about 12
3 carbons.

1 **64.** (Amended) The intact charge-switch NP probe according to claim **62**,
2 wherein said linker carries at least one positive charge.

1 **65.** (Amended) The intact charge-switch NP probe according to claim **62**
2 wherein said linker carries at least two positive charges.

1 **66.** (Amended) The intact charge-switch NP probe according to claim **51**,
2 wherein at least one of the phosphate moieties of said nucleotide phosphate probe has an ionized
3 oxygen atom with a counter-cation associated therewith.

1 **67.** (Amended) The intact charge-switch NP probe according to claim **51**,
2 wherein said counter-cation is a metal ion.